UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JUN 30 2011

REPLY TO THE ATTENTION OF:
WW-16J

Marylou Poppa Renshaw, Chief
Watershed Assessment and Planning Branch
Office of Water Quality
Indiana Department of Environmental Management
Mail Code 65-44 Shadeland
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

Dear Ms. Renshaw:

Enclosed is the U. S. Environmental Protection Agency's review of the Indiana Department of Environmental Management's (IDEM) 2010 Section 303(d) list of impaired waters (Category 5 of the Integrated Report). In particular, EPA's review focuses on IDEM's decision to not include waterbody impairments on the final 2010 list for certain metals (copper, zinc, nickel, lead, aluminum, iron, and manganese) based on its decision to not use derived criteria and total recoverable metals data for listing assessments.

EPA requests that IDEM list the waterbody impairments included in Tables A and B of the enclosed document, and relist the waterbody impairments included in Table C. Alternatively, EPA requests that IDEM demonstrate "good cause" for not including these waters on the list pursuant to 40 C.F.R. 130.7(b)(6)(iv). We look forward to IDEM's response. If you have any questions regarding the information in the enclosed document, or would like to discuss the information contained therein, please contact me at 312-886-0236.

Sincerely,

Peter Swenson

Peter Swenson
Chief, Watersheds and Wetlands Branch

Enclosure

cc: Bonny Elifritz, IDEM
Jody Arthur, IDEM

Enclosure to EPA Letter to Indiana Department of Environmental Management

Subject: Indiana's removal of certain waterbody impairments from the 2010 303(d) list

Indiana submitted a draft of its most recent 303(d) list to EPA Region 5 on October 29, 2009. The draft was public noticed from Oct 26, 2009 through February 26, 2010. Following review of public comments, IDEM revised the list and submitted a final 303(d) list to EPA on November 30, 2010.

The final list submitted to EPA contains a number of changes which were made as a result of public comment. As part of these changes, IDEM removed a series of waterbody impairments due to certain metals (copper, zinc, nickel, lead, aluminum, iron, and manganese) based on its decision to not use derived criteria and total recoverable metals monitoring results as bases for 303(d) listing decisions. Some of the removed metal impairments were not previously included in the State's 2008 List (Tables A and B). Other removed metal impairments were included in the State's 2008 List (Table C). For the reasons discussed below, EPA disagrees with IDEM's decision to not include waterbody metal impairment listings based on the justifications provided in the *2010 Indiana Integrated Water Monitoring and Assessment Report, Appendix G: Indiana's 303(d) List of Impaired Waters and Consolidated Assessment and Listing Methodology*. EPA therefore requests that IDEM list the waterbody impairments included in Tables A and B, and relist the waterbody impairments included in Table C. Alternatively, EPA requests that IDEM demonstrate "good cause" for not including these waters on the list pursuant to 40 C.F.R. 130.7(b)(6)(iv).

1. Decision to not list based on derived criteria (Tier I and Tier II Aquatic life criteria):

Indiana's water quality standards (WQS) include narrative criteria and methods[1] for the calculation of a numeric expression (Tier I and Tier II) of the narrative criteria for substances for which numeric criteria are not specified in the WQS ("derived criteria"), to ensure that the concentration of a substance or combination of substances does not become acutely or chronically toxic to aquatic organisms. As indicated in *Appendix G* of Indiana's final Integrated Report, the methods for the calculation of derived criteria are used by IDEM's NPDES Program in order to develop permit limits to ensure that discharges do not cause or contribute to water quality impairment.

EPA has reviewed and approved the Tier I methodology, and thus criteria derived from the methodology are effective for Clean Water Act purposes. The specific Tier I criteria values have not been promulgated into Indiana's Administrative Code. Similarly, Tier II values are derived in accordance with the methods specified in Indiana's WQS, but are calculated using a smaller data set than that required for the development of Tier I criteria, due in most cases to a lack of data for one or more of the required sensitive species.

Both Tier I criteria and Tier II values calculated in accordance with the methods specified in Indiana's WQS are considered to be scientifically defensible for use in developing NPDES permit limits. In response to public comments that the Indiana Water Quality Board must promulgate the Tier I and Tier II criteria before they can be used for permitting, 303(d) listing or the TMDL program, IDEM stated: "Indiana's narrative water quality criteria are codified in the state's WQS at 327 IAC 2 and were approved by U.S. EPA. The water quality criteria derived in accordance with Indiana's WQS remain an essential part of developing permit limits for facilities discharging substances for which aquatic life criteria are not specifically articulated as surface water quality criteria in Tables 6-1 through 6-3 in

[1] Methods for deriving Tier I criteria and Tier II values are described in:
For waters in the Great Lakes Basin, 327 IAC 2-1.5-Sections 11 and 13 through 16 (for Tier I) and Sections 12-16 (for Tier II).
For waters outside the Great Lakes Basin, 327 IAC 2-1 Sections 8.2, 8.3 and 8.9

Indiana's WQS." (*303(d) Attachment 5: Public Comments and IDEM's Responses* at 5-4). Nevertheless, IDEM now takes the position that until these derived criteria go through the rulemaking process described in IC 13-14-9 and IC 4-22-2, they cannot be used to make 305(b) assessment and 303(d) listing decisions, nor be used to develop TMDLs.

EPA disagrees that only promulgated numeric criteria are WQS for use in 303(d) listing decisions. The regulation at 40 C.F.R. 130.7(b)(3) states that "for the purposes of listing waters under §130.7(b), the term 'water quality standard applicable to such waters' and 'applicable water quality standards' refer to those water quality standards established under section 303 of the Act, including numeric criteria, narrative criteria, waterbody uses, and antidegradation requirements". In response to public comments on the draft 2010 303(d) list, IDEM stated that "the derived criteria used in making impairment decisions were developed in accordance with 327 IAC 2-1-8.1 and 8.2. These rules are part of Indiana's WQS and as such, have been promulgated in accordance with Indiana law." (*303(d) Attachment 5: Public Comments and IDEM's Responses* at 5-3). The State of Indiana adopted WQS with procedures[2] for deriving criteria and these procedures were promulgated in accordance with Indiana law (under the authority of IC 13-14-9), and approved by EPA. As a result, any criteria derived using those procedures are "applicable water quality standards" for purposes of 305(b) assessment, 303(d) listing decisions and TMDL development (*See* 40 C.F.R. 131.21(c), (d)).

In response to a public comment that the derived criteria should be promulgated under IC 4-22-2 prior to their use, IDEM "decided against using derived criteria for the purposes of making 305(b) assessments and 303(d) listing decisions, or for TMDL development until adequate due process is provided on the derivation and use of derived criteria." (*303(d) Attachment 5: Public Comments and IDEM's Responses* at 5-3). However, as previously noted, the procedures for deriving criteria were promulgated in accordance with Indiana law under the authority of IC 13-14-9. The rulemaking procedures at IC 13-14-9, gave the public the opportunity to comment on and participate in the adoption of the WQS. When IDEM uses the water quality criteria derived in accordance with IAC 13-14-9 to develop permit limits it does not need to specifically promulgate these derived criteria as administrative rules under IC 4-22-2, but rather simply applies its existing WQS. Likewise, when IDEM uses derived criteria for 305(b) assessment and 303(d) listing decisions it does not need to promulgate administrative rules under IC 4-22-2, but rather can apply the existing WQS. Therefore, EPA believes that IDEM should use derived criteria for making listing decisions and requests that IDEM either list the waterbody metals impairments in Table A using the derived criteria that have been established, or demonstrate "good cause" for not including waters where derived criteria are not being met.

2. Decision to not list based on total recoverable metals:

In 2005, EPA approved a change in Indiana's aquatic life criteria for metals, in which the State's WQS for certain metals were revised to include a method for calculating dissolved metals criteria from total recoverable metals criteria.[3] Indiana's revised WQS include total recoverable metal criteria (numeric,

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[2] Procedures for deriving Tier I criteria and Tier II values are described in:
For waters in the Great Lakes Basin, 327 IAC 2-1.5-Sections 11 and 13 through 16 (for Tier I) and Sections 12-16 (for Tier II).
For waters outside the Great Lakes Basin, 327 IAC 2-1 Sections 8.2, 8.3 and 8.9

[3] Indiana's WQS for waters outside the Great Lakes Basin do not include procedures for calculating dissolved metals criteria for mercury and selenium (327 IAC 2-1-6, Table 6-1).

hardness-based), and dissolved metal criteria (calculated based on total recoverable metal criteria multiplied by the appropriate conversion factor) for certain metals[4].

Until now, all of IDEM's 305(b) and 303(d) metals assessments have been based on total recoverable metals results because most of the available water quality data are for total recoverable metals, as opposed to the dissolved fraction. As indicated in *Appendix G* of Indiana's final 2010 Integrated Report, however, IDEM has now determined that using total recoverable metal results for 305(b) assessments and 303(d) listing decisions is not appropriate because doing so may result in an overestimation of toxicity.

EPA agrees that in general, the dissolved metal fraction more closely approximates the bioavailable portion of metal in the water column, and thus it can be more appropriate for the protection of aquatic life (*See* "Metals Policy" memorandum issued on October 1, 1993, entitled *Office of Water Policy and Technical Guidance on Interpretation and Implementation of Aquatic Life Metals Criteria*). We disagree, however, that total recoverable metals data should be dismissed on the grounds that the dissolved metal sampled data are preferable. The adoption of the Metals Policy did not change the Agency's position that the existing total recoverable criteria published under Section 304(a) of the Clean Water Act, upon which the State's criteria are based, continue to be scientifically defensible (EPA 823-B-96-007). We note, for example, that by regulation (40 C.F.R. 122.45(c)) permit limits must be expressed as total recoverable metal in most instances.

The lack of dissolved metals data does not preclude the State from making 305(b) assessments and 303(d) listing decisions based on available total recoverable metals data. 40 C.F.R. 130.7(b)(5) states that "Each State shall assemble and evaluate all existing and readily available water quality-related data and information to develop the list required by §§130.7(b)(1) and 130.7(b)(2)". An assessment based upon the use of total recoverable metals data may be done in at least three ways:

First, ambient total recoverable data can be compared directly to the dissolved water quality criteria. Because this effectively assumes that all metal is present in the dissolved fraction, it is a worst case assumption.

Second, because Indiana's water quality standards for the metals in question include criteria for both total recoverable and dissolved metals, total recoverable metals data can be directly compared to the total recoverable metal criteria.

Third, metal translators can be applied to total recoverable metals data to estimate the dissolved fraction for assessing attainment of dissolved metal criteria. EPA guidance discusses several approaches for translating between total recoverable and dissolved metals. (*See, The Metals Translator: Guidance For Calculating A Total Recoverable Permit Limit From A Dissolved Criterion*, June 2006. EPA 823-B-96-

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[4] For waters in the Great Lakes Basin, Indiana's WQS contain metal criteria for arsenic (III), cadmium, chromium III, chromium (VI), copper, lead, nickel, silver and zinc (327 IAC 2-1.5-8, Table 8-1). The criterion maximum concentration (CMC) and criterion continuous concentration (CCC) columns of Table 8-1 contain total recoverable metals criteria (numeric and hardness-based). The criterion for the dissolved metal is calculated by multiplying the appropriate conversion factor by the CMC or CCC.

For waters outside the Great Lakes Basin, Indiana's WQS contain metal criteria for mercury and selenium (327 IAC 2-1-6, Table 6-1), and for arsenic (III), cadmium, chromium III, chromium (VI), copper, lead, nickel, silver and zinc (327 IAC 2-1-6, Table 6-2). The acute aquatic criterion (AAC) and chronic aquatic criterion (CAC) columns of Table 6-1 contain total recoverable metals criteria (numeric). The acute aquatic criterion (AAC) and chronic aquatic criterion (CAC) columns of Table 6-2 contain total recoverable metals criteria (numeric and hardness-based). The criterion for the dissolved metal in Table 6-2 is calculated by multiplying the appropriate conversion factor by the AAC or CAC.

007). One approach, which could be taken without collecting additional data, is to apply the same conversion factors used to calculate dissolved criteria from total recoverable criteria in 327 IAC 2-1-6 in order to estimate the dissolved metal concentration based upon total recoverable data. This approach will give the same result as using total recoverable data to assess the attainment of the total recoverable criteria.

For the reasons stated above, EPA believes that it is appropriate for IDEM to use the currently available total recoverable metals data for 305(b) assessments and 303(d) listing decisions, and requests that IDEM either list the waterbody metal impairments in Table B and relist the waterbody metal impairments in Table C based on the available total recoverable metals data, or demonstrate "good cause" for not including waters where the available total recoverable metals data indicate criteria are not being met.

Table A – Waterbody segments/impairments not included on Indiana's 2010 List, based on IDEM's decision to not use derived metals criteria for listing assessments.

Note: The following listings were included on IDEM's 2010 proposed list, but were not included on the 2008 List. Proposed listing assessments for the following waterbodies were based on derived criteria. As specified in Appendix G of Indiana's Final 2010 Integrated Report, IDEM indicated that it will not make listing assessments based on derived criteria until those criteria go through the State's full rulemaking process.

Waterbody AU ID	Waterbody AU Name	Cause of Impairment
INB11G4_T1003	SULPHUR CREEK (HEADWATERS)	ALUMINUM
INB11G4_T1003	SULPHUR CREEK (HEADWATERS)	IRON
INB11G4_T1003	SULPHUR CREEK (HEADWATERS)	MANGANESE
INB11G4_T1004	SULPHUR CREEK	ALUMINUM
INB11G4_T1004	SULPHUR CREEK	IRON
INB11G4_T1004	SULPHUR CREEK	MANGANESE
INB11G4_T1005	SULPHUR CREEK	ALUMINUM
INB11G4_T1005	SULPHUR CREEK	IRON
INB11G4_T1005	SULPHUR CREEK	MANGANESE
INB11G6_02	BIG BRANCH	ALUMINUM
INB11G6_02	BIG BRANCH	IRON
INB11G6_03	MUD CREEK	ALUMINUM
INB11G6_03	MUD CREEK	IRON
INB11G6_04	MUD CREEK	ALUMINUM
INB11G6_04	MUD CREEK	IRON
INB11G9_01	BUTTERMILK CREEK	ALUMINUM
INB11G9_02	BUTTERMILK CREEK	ALUMINUM
INB11G9_03	BUTTERMILK CREEK	ALUMINUM
ING0313_06	NETTLE CREEK	IRON
ING0318_01	WHITEWATER RIVER	ALUMINUM
ING0322_T1012	BLOOMINGPORT CREEK	ALUMINUM
ING0324_01	GREENS FORK	IRON
ING0335_01	NOLANDS FORK	IRON
ING0348_02	WHITEWATER RIVER	IRON
ING0352_01	SALT CREEK	ALUMINUM
ING0352_T1003	RIGHTHAND FORK SALT CREEK	ALUMINUM
ING0352_T1006	RIGHTHAND FORK SALT CREEK	ALUMINUM
ING0365_01	WHITEWATER RIVER	ALUMINUM
ING0365_02	WHITEWATER CANAL	ALUMINUM
ING0365_T1002	SNAIL CREEK	ALUMINUM
ING0365_T1003	MCCARTYS RUN	ALUMINUM
ING0365_T1004	BUTLERS RUN	ALUMINUM
ING0365_T1008	YELLOW BANK CREEK	ALUMINUM

Enclosure to EPA Letter to Indiana Department of Environmental Management

Table A – Waterbody segments/impairments not included on Indiana's 2010 List, based on IDEM's decision to not use derived metals criteria for listing assessments.

Note: The following listings were included on IDEM's 2010 proposed list, but were not included on the 2008 List. Proposed listing assessments for the following waterbodies were based on derived criteria. As specified in Appendix G of Indiana's Final 2010 Integrated Report, IDEM indicated that it will not make listing assessments based on derived criteria until those criteria go through the State's full rulemaking process.

Waterbody AU ID	Waterbody AU Name	Cause of Impairment
ING0379_01	WHITEWATER RIVER, EAST FORK	IRON
ING037B_01	WHITEWATER RIVER, EAST FORK	ALUMINUM
ING037D_02	RICHLAND CREEK	ALUMINUM
ING037E_05	HANNA CREEK	ALUMINUM
ING037E_06	HANNA CREEK	ALUMINUM
ING037E_T1001	DUBOIS CREEK	ALUMINUM
ING037H_T1001	WHITEWATER RIVER, EAST FORK - UNNAMED TRIBUTARY	ALUMINUM
ING037H_T1003	WHITEWATER RIVER, EAST FORK - UNNAMED TRIBUTARY	ALUMINUM
ING037H_T1006	WHITEWATER RIVER, EAST FORK - UNNAMED TRIBUTARY	ALUMINUM
ING037H_T1007	WHITEWATER RIVER, EAST FORK - UNNAMED TRIBUTARY	ALUMINUM
ING037H_T1010	WOLF CREEK	ALUMINUM
ING037H_T1011	WHITEWATER RIVER, EAST FORK - UNNAMED TRIBUTARY	ALUMINUM
ING037H_T1018	WHITEWATER RIVER, EAST FORK - UNNAMED TRIBUTARY	ALUMINUM
ING0383_T1005	POSSUM HOLLOW	IRON
ING0384_01	WHITEWATER RIVER	ALUMINUM
ING0384_T1004	GOBLES CREEK	ALUMINUM
ING0384_T1005	*Name not provided	ALUMINUM
ING0384_T1006	*Name not provided	ALUMINUM
ING0385_01	WHITEWATER RIVER	ALUMINUM
ING0385_01	WHITEWATER RIVER	IRON
ING0388_01	SOURS RUN	ALUMINUM
ING0388_T1005	SOURS RUN - UNNAMED TRIBUTARY	ALUMINUM
ING0388_T1007	SATER RUN	ALUMINUM
INP0915_00	YOUNGS CREEK	ALUMINUM
INP0924_T1003	PATOKA RIVER	ALUMINUM
INP0925_00	POISON CREEK-BAUER CREEK	ALUMINUM
INP0926_T1004	PATOKA RIVER-LOND DITCH	ALUMINUM
INP0928_T1005	PATOKA RIVER	ALUMINUM
INP0933_00	HALL CREEK	ALUMINUM
INP0934_00	FLAT CREEK-RICHLAND CREEK	ALUMINUM
INP0935_00	FLAT CREEK-LOWER	ALUMINUM
INP0936_00	STRAIGHT RIVER	ALUMINUM
INP0942_00	HUNLEY CREEK-HALO RUN/GREEN CREEK	ALUMINUM
INP0947_T1007	PATOKA RIVER	ALUMINUM
INP0948_00	PATOKA RIVER-CROOKED/ALTAR CREEKS	ALUMINUM
INP0948_T1008	PATOKA RIVER	ALUMINUM
INP0951_00	FLAT CREEK HEADWATERS	ALUMINUM
INP0962_00	PATOKA RIVER-ROCK CREEK TRIBUTARYS	ALUMINUM
INP0965_T1012	PATOKA RIVER	ALUMINUM
INP0968_T1014	PATOKA RIVER	ALUMINUM
INP0971_T1021	SOUTH FORK PATOKA RIVER	ALUMINUM
INP0973_T1023	SOUTH FORK PATOKA RIVER	ALUMINUM
INP0981_00	ROBINSON/BIG CREEKS TRIBUTARYS	ALUMINUM
INP0982_00	EAST FORK KEG CREEK	ALUMINUM
INP0987_T1019	PATOKA RIVER	ALUMINUM
INW0181_00	COX DITCH - CHRISTY/KIGIN DITCHES	ALUMINUM
INW0195_M1054	WHITE RIVER - HAVERSTICK CREEK/ HOWLAND DITCH TRIBUTARYS	ALUMINUM

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Table A – Waterbody segments/impairments not included on Indiana's 2010 List, based on IDEM's decision to not use derived metals criteria for listing assessments.

Note: The following listings were included on IDEM's 2010 proposed list, but were not included on the 2008 List. Proposed listing assessments for the following waterbodies were based on derived criteria. As specified in Appendix G of Indiana's Final 2010 Integrated Report, IDEM indicated that it will not make listing assessments based on derived criteria until those criteria go through the State's full rulemaking process.

Waterbody AU ID	Waterbody AU Name	Cause of Impairment
INW01AC_T1046	FALL CREEK	ALUMINUM
INW01C7_00	LITTLE EAGLE BRANCH - WOODRUFF BRANCH	ALUMINUM
INW01D2_M1059	WHITE RIVER	ALUMINUM
INW01E8_T1121	NORTH PRONG STOTTS CREEK	ALUMINUM
INW01ED_M1082	WHITE RIVER - HENDERSON BRIDGE	ALUMINUM
INW01G1_M1092	WHITE RIVER	ALUMINUM
INW01H7_T1103	INDIAN CREEK	ALUMINUM
INW0213_00	BEANBLOSSOM CREEK	ALUMINUM
INW0221_M1009	WHITE RIVER	ALUMINUM
INW0223_T1018	MCCORMICKS CREEK	ALUMINUM
INW0228_00	RACCOON CREEK-LICK CREEK	ALUMINUM
INW022D_00	FISH CREEK	ALUMINUM
INW0249_T1024	PLUMMER CREEK	ALUMINUM
INW0259_M1032	WHITE RIVER	ALUMINUM
INW0275_M1037	WHITE RIVER – WHEATLAND	ALUMINUM
INW0284_00	FLAT CREEK AND OTHER TRIBUTARYS	ALUMINUM
INW0287_00	KILLION CANAL AND OTHER TRIBUTARIES	ALUMINUM
INW0293_00	VEALE CREEK – LOWER	ALUMINUM
INW0297_M1040	WHITE RIVER	ALUMINUM
INW02A3_M1052	WHITE RIVER	ALUMINUM
INW02AC_M1056	WHITE RIVER	ALUMINUM
INW0327_T1005	BIG WALNUT CREEK	ALUMINUM
INW0335_00	LITTLE WALNUT CREEK - LONG BRANCH	ALUMINUM
INW0368_00	LAKE DITCH-HEADWATERS	ALUMINUM
INW036C_00	MILL CREEK-VERMILLION/HIGGENS BRANCHES	ALUMINUM
INW0384_00	BIRCH CREEK-LITTLE BIRCH CREEK	ALUMINUM
INW0394_T1016	EEL RIVER	ALUMINUM
INW0395_T1019	CONNELLY DITCH-HEADWATERS	ALUMINUM
INW0455_T1020	BIG BLUE RIVER	IRON
INW0465_T1032	SUGAR CREEK SMITH-JOHNSON DITCH	ALUMINUM
INW0498_T1038	SUGAR CREEK	IRON
INW0521_T1004	FLATROCK RIVER-GRAVEL PITS	IRON
INW0526_T1007	FLATROCK RIVER	ALUMINUM
INW0552_T1013	FLATROCK RIVER - WILLOW PARK	IRON
INW0561_M1015	EAST FORK WHITE R-COLUMBUS	IRON
INW0613_01	CLIFTY CREEK, NORTH FORK	ALUMINUM
INW0615_00	CLIFTY CREEK	ALUMINUM
INW063K_T1011	SAND CREEK	IRON
INW0643_M1016	EAST FORK WHITE RIVER	ALUMINUM
INW0643_M1016	EAST FORK WHITE RIVER	IRON
INW0654_00	EAST FORK WHITE CREEK-UPPER	ALUMINUM
INW0665_M1021	EAST FORK WHITE RIVER	ALUMINUM
INW0721_00	GRAHAM CREEK-HEADWATERS	ALUMINUM
INW0722_00	NORTH FORK GRAHAM CREEK	ALUMINUM
INW0723_00	GRAHAM CREEK-CAMPFIRE CREEK	ALUMINUM
INW0724_00	LITTLE GRAHAM CREEK-HEADWATERS	ALUMINUM
INW0725_00	LITTLE GRAHAM-HORSE & POPLAR BRANCH	ALUMINUM

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Table A – Waterbody segments/impairments not included on Indiana's 2010 List, based on IDEM's decision to not use derived metals criteria for listing assessments.

Note: The following listings were included on IDEM's 2010 proposed list, but were not included on the 2008 List. Proposed listing assessments for the following waterbodies were based on derived criteria. As specified in Appendix G of Indiana's Final 2010 Integrated Report, IDEM indicated that it will not make listing assessments based on derived criteria until those criteria go through the State's full rulemaking process.

Waterbody AU ID	Waterbody AU Name	Cause of Impairment
INW0754_00	NORTH FORK-FLATROCK/WOLF CREEKS	ALUMINUM
INW0755_00	NORTH FORK-SUGAR/LEATHERWOOD CREEK	ALUMINUM
INW0756_00	NORTH FORK-FINCH BRANCH	ALUMINUM
INW0757_00	BRUSH CREEK (JENNINGS)	ALUMINUM
INW0761_00	OTTER CREEK-LONG BRANCH	ALUMINUM
INW0763_00	OTTER CREEK-FALLING TIMBERS BRANCH	ALUMINUM
INW0771_00	VERNON FORK-CROSLEY LAKE	ALUMINUM
INW0771_00	VERNON FORK-CROSLEY LAKE	IRON
INW0776_00	VERNON FORK-SIXMILE CREEK	ALUMINUM
INW0781_00	MUTTON CREEK (UPSTREAM OF LITTLE MUTTON CREEK)	ALUMINUM
INW0782_00	MUTTON CREEK-LOWER	ALUMINUM
INW0783_00	STORM CREEK-UPPER	ALUMINUM
INW0796_T1003	MUSCATATCUK RIVER (DOWNSTREAM OF VERNON FORK)	ALUMINUM
INW0796_T1003	MUSCATATCUK RIVER (DOWNSTREAM OF VERNON FORK)	IRON
INW07B7_M1005	MUSCATATUCK RIVER	ALUMINUM
INW0813_M1002	EAST FORK WHITE RIVER	ALUMINUM
INW0822_M1003	EAST FORK WHITE R - TUNNELTON	ALUMINUM
INW0845_M1053	EAST FORK WHITE RIVER (ABOVE BEDFORD WATER INTAKE)	IRON
INW08A2_M1008	EAST FORK WHITE RIVER	IRON
INW08A3_M1058	EAST FORK WHITE RIVER	ALUMINUM
INW08B4_00	INDIAN CREEK-TOWN BRANCH	ALUMINUM
INW08BA_00	INDIAN CREEK	IRON
INW08GA_T1035	LOST RIVER	ALUMINUM
INW08GC_T1034	LOST RIVER	ALUMINUM
INW08GF_T1032	LOST RIVER	IRON
INW08H1_M1015	EAST FORK WHITE RIVER	ALUMINUM
INW08H7_M1070	EAST FORK WHITE RIVER	ALUMINUM
INW08H9_M1055	EAST FORK WHITE RIVER	IRON

Table B – Waterbody segments/impairments not included on Indiana's 2010 List, based on IDEM's decision to not use total recoverable metal data for listing assessments.

Note: The following listings were included on IDEM's 2010 proposed list, but were not included on the 2008 List. Proposed listing assessments for the following waterbodies were based on total recoverable metals data. As specified in Appendix G of Indiana's Final 2010 Integrated Report, IDEM indicated that it will not make listing assessments based on total recoverable metals data. Instead it will only list based on dissolved metals data.

Waterbody AU ID	Waterbody AU Name	Cause of Impairment
INB11G4_T1004	SULPHUR CREEK	COPPER
INB11G4_T1004	SULPHUR CREEK	NICKEL
INB11G4_T1004	SULPHUR CREEK	ZINC
INB11G6_02	BIG BRANCH	ZINC
INB11G6_03	MUD CREEK	ZINC
INP0969_T1015	PATOKA RIVER	LEAD
INW014A_T1019	WHITE RIVER – PERKINSVILLE	LEAD
INW0187_00	CICERO CREEK-WEASEL CREEK	ZINC
INW01AC_T1046	FALL CREEK	LEAD
INW0224_M1011	WHITE RIVER	LEAD

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Table B – Waterbody segments/impairments not included on Indiana's 2010 List, based on IDEM's decision to not use total recoverable metal data for listing assessments.

Note: The following listings were included on IDEM's 2010 proposed list, but were not included on the 2008 List. Proposed listing assessments for the following waterbodies were based on total recoverable metals data. As specified in Appendix G of Indiana's Final 2010 Integrated Report, IDEM indicated that it will not make listing assessments based on total recoverable metals data. Instead it will only list based on dissolved metals data.

Waterbody AU ID	Waterbody AU Name	Cause of Impairment
INW0272_M1036	WHITE RIVER - EDWARDSPORT TO INDIAN CREEK	LEAD
INW0342_T1007	BIG WALNUT CREEK	ZINC
INW036C_00	MILL CREEK-VERMILLION/HIGGENS BRANCHES	ZINC
INW0383_00	EEL RIVER-TURKEY CREEK	ZINC
INW039D_T1025	EEL RIVER	LEAD
INW0643_M1016	EAST FORK WHITE RIVER	LEAD
INW0753_00	NORTH FORK-HONEY CREEK/SQUARE RUN	COPPER
INW0771_00	VERNON FORK-CROSLEY LAKE	LEAD
INW0796_T1003	MUSCATATCUK RIVER (DOWNSTREAM OF VERNON FORK)	LEAD
INW08BA_00	INDIAN CREEK	LEAD

Table C – Delisted waterbody segments/impairments from Indiana's 2010 List, based on IDEM's decision to not use total recoverable metal data for listing assessments.

Note: The following listings were included on IDEM's 2010 proposed list, and were also included on the 2008 List. Proposed listing assessments for the following waterbodies were based on total recoverable metals data. As specified in Appendix G of Indiana's Final Integrated Report, IDEM indicated that it will not make listing assessments based on total recoverable metals data. Instead it will only list based on dissolved metals data.

Waterbody AU ID	Waterbody AU Name	Cause of Impairment
INB0614_T1001	GAFF DITCH	LEAD
INB084B_T1046	BIG PINE CREEK - BROWN DT TO PINE VILLAGE	LEAD
INB11G4_T1024 **	SULPHER CREEK	COPPER
INB11G4_T1024 **	SULPHER CREEK	NICKEL
INB11G4_T1024 **	SULPHER CREEK	ZINC
INP0947_T1007	PATOKA RIVER	LEAD
INW08A3_M1058	EAST FORK WHITE RIVER	LEAD

**For the 2010 listing cycle, this AU was resegmented into INB11G4_T1003 and INB11G4_T1005.